

Geographical information system for hydrographic data

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Deskripsi Lengkap: <https://lib.ui.ac.id/detail?id=90124&lokasi=lokal>

Abstrak

A model to contour hydrographic data was designed to determine the depth of water. Because of sparse and random nature of the given data, we superimposed an optimally sized grid system on the region and assigned the known data at their corresponding grid points. Then we used the principle of minimum curvature to derive finite difference equations that calculated the remaining grid points. We iterated these equations until a convergence criterion of 0.01 over the whole grid was reached; this gave us a grid of values to contour. To insure convergence of the grid before round-off error swamped the routine, we put the grid through an initialization routine. The Geographical Information System is used to develop a powerful set of tools for contouring and displaying hydrographic data from the real world.